r9h54n9wq

March 5, 2025

[2]:
```
pip install matplotlib
```

```
Defaulting to user installation because normal site-packages is not
writeableNote: you may need to restart the kernel to use updated packages.

Requirement already satisfied: matplotlib in
c:\users\advik\appdata\roaming\python\python312\site-packages (3.10.1)
Requirement already satisfied: contourpy>=1.0.1 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(1.3.1)
Requirement already satisfied: cycler>=0.10 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(4.56.0)
Requirement already satisfied: kiwisolver>=1.3.1 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(1.4.8)
Requirement already satisfied: numpy>=1.23 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(2.2.2)
Requirement already satisfied: packaging>=20.0 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(24.2)
Requirement already satisfied: pillow>=8 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(11.1.0)
Requirement already satisfied: pyparsing>=2.3.1 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(3.2.1)
Requirement already satisfied: python-dateutil>=2.7 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from matplotlib)
(2.9.0.post0)
Requirement already satisfied: six>=1.5 in
c:\users\advik\appdata\roaming\python\python312\site-packages (from python-
dateutil>=2.7->matplotlib) (1.16.0)
```

```
[notice] A new release of pip is available: 25.0 -> 25.0.1
[notice] To update, run: python.exe -m pip install --upgrade pip
```

[3]:
```
import pandas as pd
import matplotlib.pyplot as plt
```

[4]:
```
df=pd.read_csv(r"C:\Users\advik\OneDrive\Desktop\experiment4.csv")
df
```

[4]:

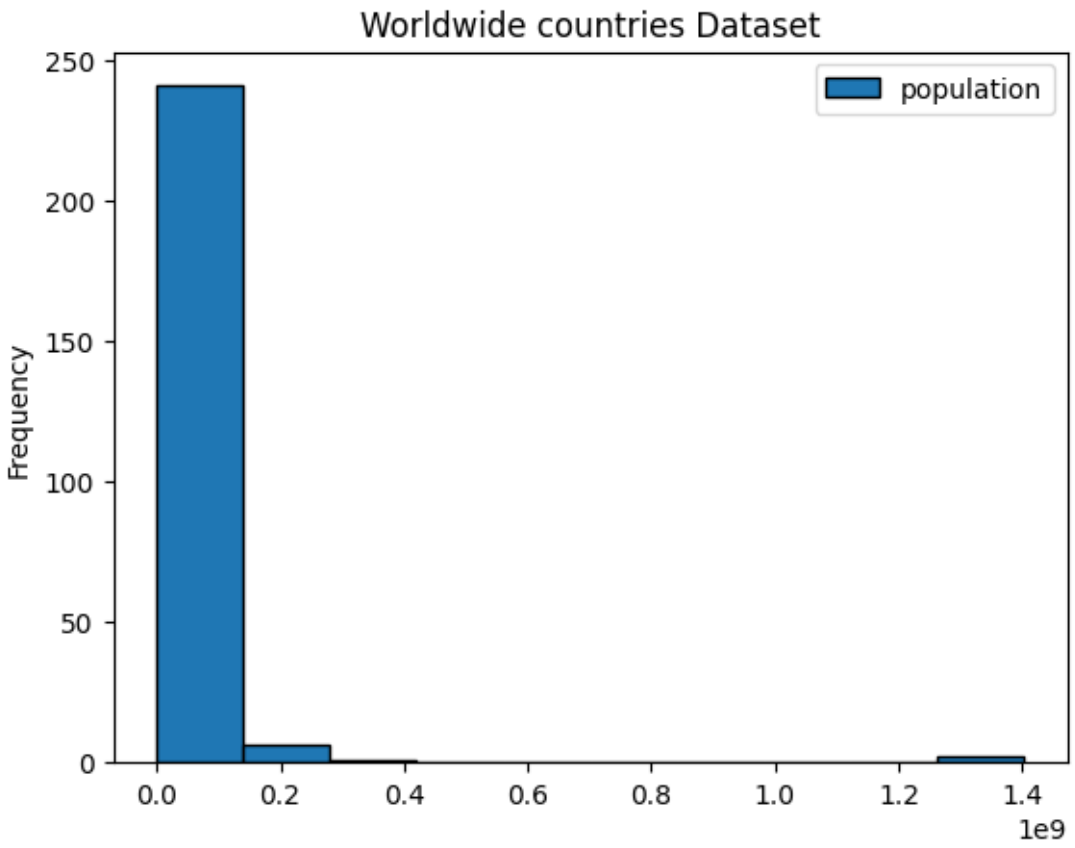
	name	capital	population	area	region
0	South Georgia	King Edward Point	30	3903.0	Antarctic
1	Grenada	St. George's	112519	344.0	Americas
2	Switzerland	Bern	8654622	41284.0	Europe
3	Sierra Leone	Freetown	7976985	71740.0	Africa
4	Hungary	Budapest	9749763	93028.0	Europe
..	…	…	…	…	…
245	Belgium	Brussels	11555997	30528.0	Europe
246	Israel	Jerusalem	9216900	20770.0	Asia
247	New Zealand	Wellington	5084300	270467.0	Oceania
248	Nicaragua	Managua	6624554	130373.0	Americas
249	Anguilla	The Valley	13452	91.0	Americas

[250 rows x 5 columns]

Histogram of population

[5]:
```
df.plot(kind="hist", y= "population", bins=10 , edgecolor='black',␣
↪title="Worldwide countries Dataset")
# A histogram is a type of chart that shows the frequency distribution of data␣
↪points across a continuous range of numerical values.
```

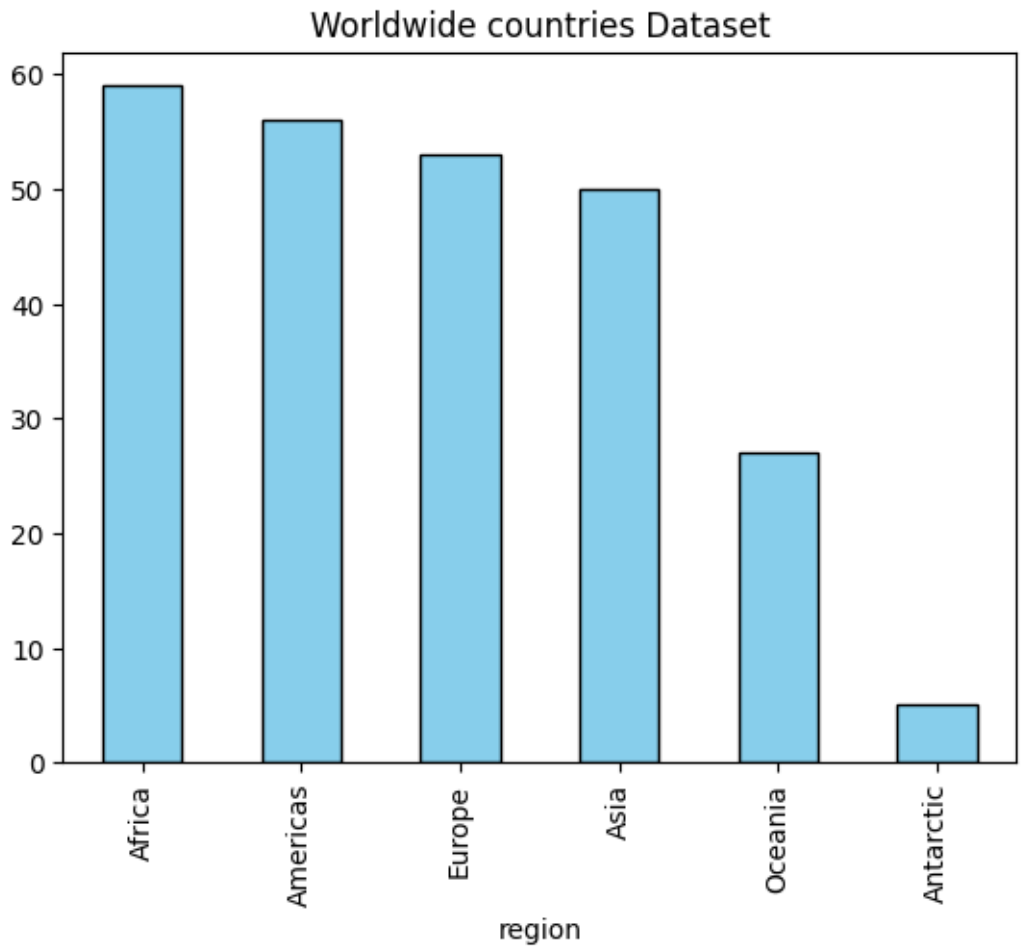
[5]:
```
<Axes: title={'center': 'Worldwide countries Dataset'}, ylabel='Frequency'>
```



Bar chart of region

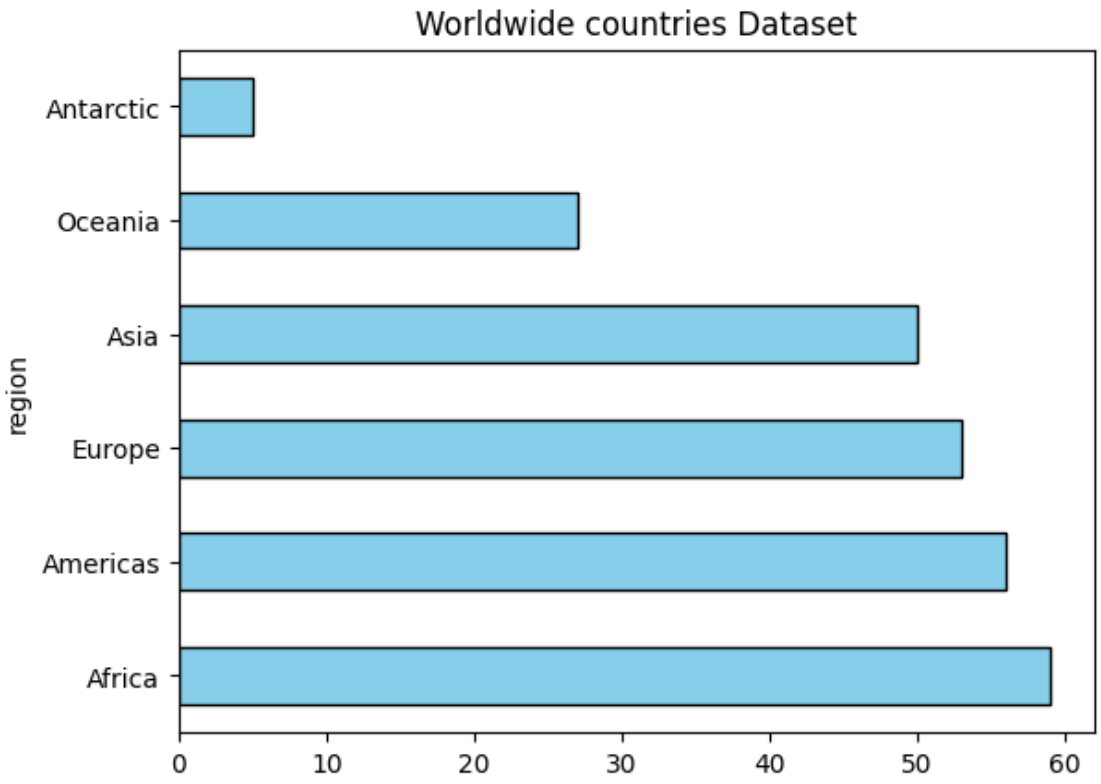
[ ]:
```
df['region'] .value_counts().plot(kind='bar', title="Worldwide countries␣
↪Dataset", color='skyblue', edgecolor='black')


# A bar chart is a graphical representation used to display and compare␣
↪discrete categories of data through rectangular bars, where the length or␣
↪height of each bar is proportional to the frequency or value of the␣
↪corresponding category.
```

[ ]:
```
<Axes: title={'center': 'Worldwide countries Dataset'}, xlabel='region'>
```



[ ]:
```
df['region'] .value_counts().plot(kind='barh', title="Worldwide countries␣
 ↪Dataset", color='skyblue', edgecolor='black')
# A bar chart can also be horizontal.
```

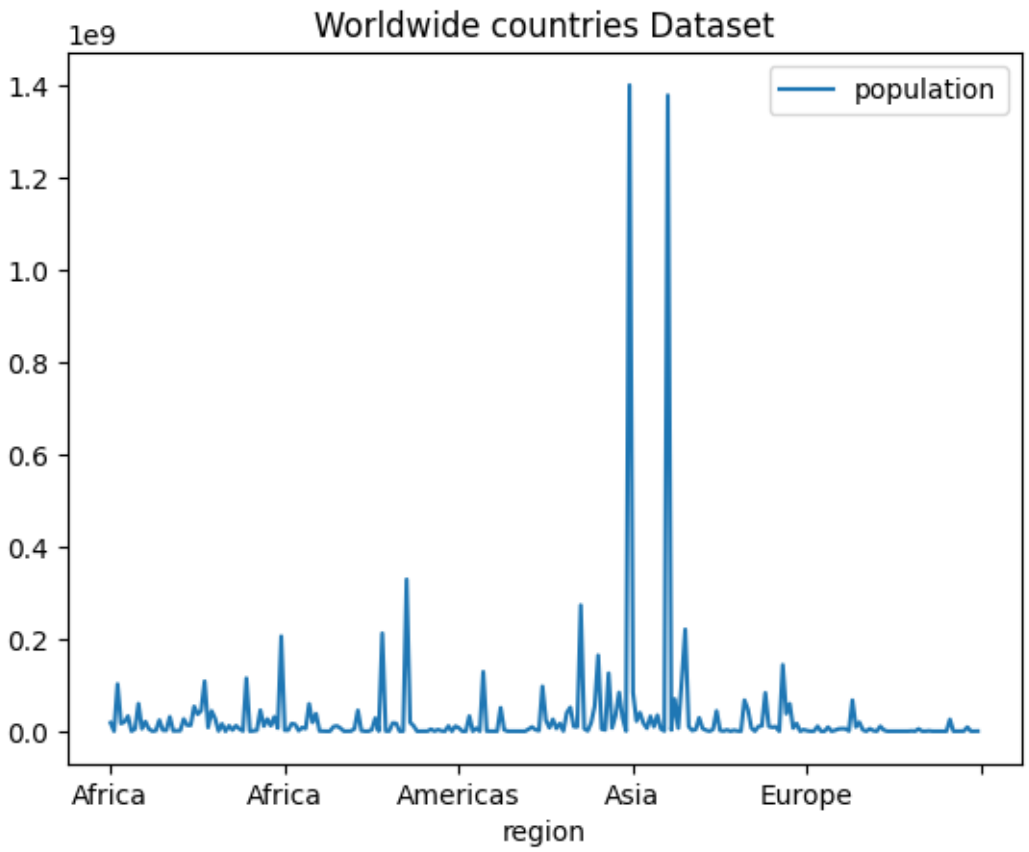
[ ]:
```
<Axes: title={'center': 'Worldwide countries Dataset'}, ylabel='region'>
```



Line plot of region and population

```
[ ]: df.sort_values(by="region").plot(kind='line', x="region", y="population",␣
      ↪title="Worldwide countries Dataset")
     #A line plot is a graph that shows data points on a number line using dots or␣
      ↪other symbols.
```

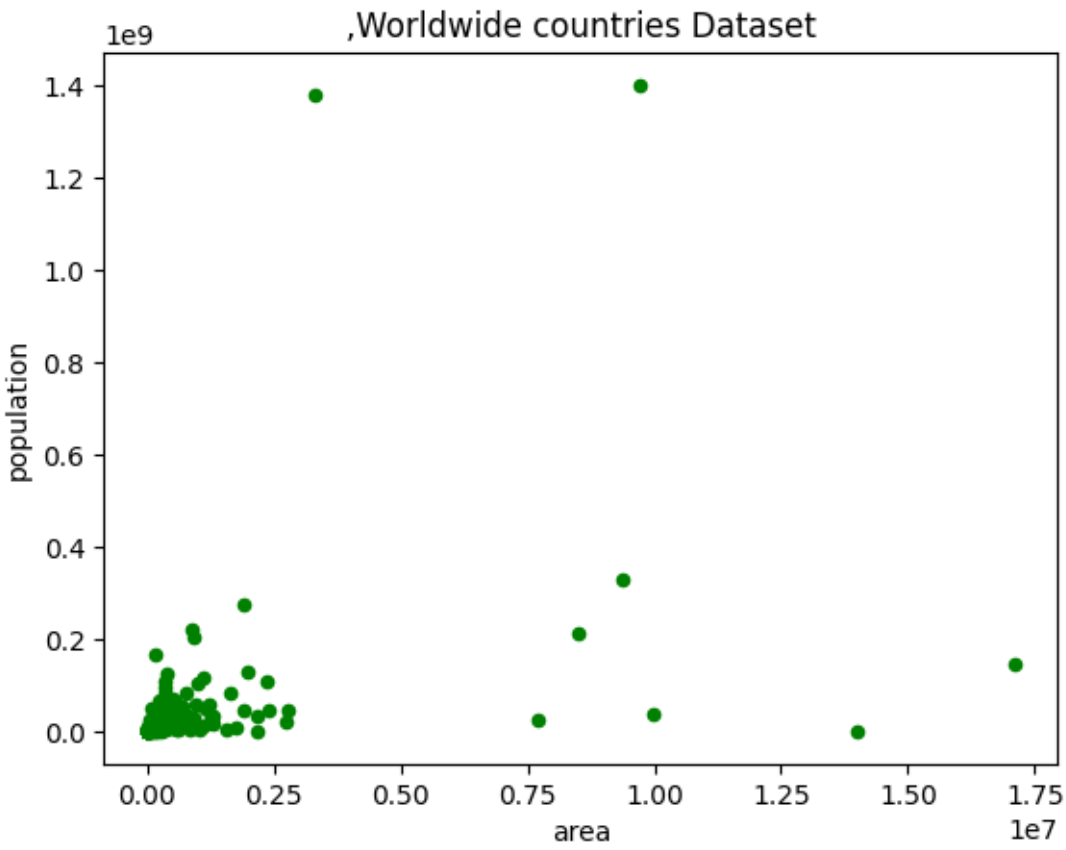
```
[ ]: <Axes: title={'center': 'Worldwide countries Dataset'}, xlabel='region'>
```



Scatter plot of area and population

```
[ ]: df.plot(kind='scatter', x='area',y='population', title=",Worldwide countries␣
      ↪Dataset", color='green')
     # A scatter plot is a graph that shows the relationship between two variables␣
      ↪by plotting data points as dots on a chart.
```

```
[ ]: <Axes: title={'center': ',Worldwide countries Dataset'}, xlabel='area',
     ylabel='population'>
```


,Worldwide countries Dataset
1e9
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
population
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
area
1e7